**Alfalfa Hay Profit Expectation**

shifts in land-use pattern resulting from cotton acreage allotments influenced by price expectation

Most cotton growers in California must choose an alternative land-use pattern for 1954—a choice necessitated by cotton acreage allotments.

Profit expectations of each crop considered as a feasible alternative to cotton will ultimately determine how the land will be used. In these considerations price expectations of various crops are important elements.

In a substantial segment of the cotton-producing areas of California alfalfa hay will be one among several alternative crops considered.

**Changing Factors**

Alfalfa hay was one of the important crops absorbing the acreage diverted from cotton in 1950—the most recent year of cotton allotments—but the pattern of acreage shifts in 1950 can not serve directly as a basis for projecting the probable acreage shifts in 1954. The economic factors influencing the farmer's decisions with respect to land use change over time.

In arriving at price expectations for a particular crop it should be helpful to bear in mind the factors which—on the basis of historical evidence—seem to be related to the price of that crop.

A statistical analysis of prices received by California farmers for alfalfa hay covering the crop years 1924–1940 and 1947–1952 suggests some of the factors related to price of this crop. The years 1941–1946 were excluded on the assumption that the price determining forces were somewhat disturbed by economic conditions associated with World War II.

The bulky nature of alfalfa hay effectively restricts its market to California and the immediately surrounding area. For this reason the variables directly related to alfalfa prices should be adequately represented by state data from which all the variables introduced in the analysis were drawn.

**Price Variations**

The factors which appear systematically related to alfalfa hay prices over the period analyzed were total supply of alfalfa hay, prices received by farmers for livestock and livestock products, and fall pasture condition. These factors—when introduced into the analysis—explain 95% of the variation in alfalfa hay prices.

Total supply of alfalfa hay on farms in any given year is the sum of production in that year and carry-over from the previous year. Carry-over statistics for the state are for all hay and do not give alfalfa separately. However, total hay carry-over in this state is dominated by alfalfa, hence, the sum of total hay carry-over and production of alfalfa was considered a close approximation to total supply of alfalfa on farms.

The analysis indicated that in the period studied a change in total supply of 100 thousand tons was associated with a change in the opposite direction of around 47¢ per ton—baled basis—in the farm price of alfalfa hay. The introduction of alfalfa hay production and total hay carry-over as separate variables in the analysis gave similar results.

**Direct Influences**

The prices prevailing for livestock and livestock products would be expected to bear directly on the price farmers are willing to pay for alfalfa hay. An index of prices received by California farmers for livestock and livestock products—with the period 1935–1939 as the base of 100—was introduced into the analysis to represent this economic factor. The results indicated that for the period analyzed a change of one point in reported October pasture condition was associated with a change in the opposite direction of around 9¢ per ton—baled basis—in the farm price of alfalfa. The introduction of average October-November pasture condition as an alternative variable gave very similar results.

**Variables and Prices**

The average relations of price with the separate variables are—in each case—net of variation in the other factors introduced into the analysis. With reference to the supply-price relation, for example, the procedure in the analysis attempted to hold livestock prices and pasture condition constant when measuring the average relation between supply and price.

The quantitative results are interpreted as describing average relations prevailing in the period studied. The use of those relations directly in forecasting the farm price of alfalfa hay in a future year is hazardous. The formulation of the problem from which these results have come can be considered only an approximation.

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ALFALFA
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approximate representation of the more
complex economic relationships deter-
mining alfalfa hay prices.

Recognizing the limitations of the pro-
cedure, the use of the quantitative rela-
tionships summarized for estimating alfalfa
hay prices may be illustrated with refer-
tence to the crop year—1953. Production
of alfalfa in 1953 was estimated at 4,617
thousand tons. Adding to this is the esti-
mated total hay carry-over on May 1—
267 thousand tons—brings the total sup-
ply for the year to 4,881 thousand tons.
October pasture condition was estimated
at 75% of normal. The preliminary Au-
gust index of prices of livestock and live-
stock products adjusted for seasonal
variation was 240. As a basis for com-
parison it might be indicated that the
values for these three variables in 1952
were: 4,670 thousand tons as total sup-
ply; 81 as the October pasture condi-
tion; and, 280 as the index of livestock
prices.

Considering the values of these vari-
ables the estimated farm price of alfalfa
hay for the 1953 season would be around
$23 per ton—baled basis. In view of the
level of alfalfa prices prevailing in Octo-
ber, 1953, this estimate for the season
average price would appear to be too
high. On the basis of the monthly farm
price for alfalfa for May through Octo-
ber it would appear that the season aver-
gage price will be nearer $20 per ton.
However, the price picture as of October
might be altered somewhat by pasture
condition through the fall and winter
months.

The apparent overestimate of alfalfa
price in 1953 should serve to caution
against relying on the use of the results
directly for estimating future price. The
forces which influence prices in any par-
ticular year may not be well represented
by the average relationships based on
the historical period studied. On the
other hand, the factors studied do serve
to explain a substantial part of the al-
falfa price decline in the current season.

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